Furthermore, we think it not too much to say that the illustrations alone are more than worth the price of the book. Beneath each plate are added essential particulars of the size and colors of the species represented, this being evidently intended to supply, for purposes of identification, what is lacked by the pictures themselves.

In a work of such general excellence we are somewhat surprised to notice certain careless statements, as, for instance, that the number of shore birds known is 100, instead of more than 250; that the species of kingfishers are 108, instead of about 200; and that those of humming birds are 400, whereas above 500 really exist. These slips are, however, too few and of too little consequence to seriously detract from the value and usefulness of the volume. It is without doubt the best guide to the study of birds yet published, in this country at least, and should prove, as surely it will, indispensable to the beginner in ornithology. Furthermore, it can scarcely fail to increase the author's already enviable reputation for the felicitous combination of scientific accuracy with popular description.

Harry C. Oberholser.
Washington, D. C.

SCIENTIFIC JOURNALS.

AMERICAN JOURNAL OF SCIENCE.

The July number opens with a paper by A. de Forest Palmer, Jr., on the pressure coefficient of mercury resistance. The author calls attention to the discrepancy existing between the only determinations of the pressure coefficient previously published, namely, those of Barus, who obtained .00003 for the commercial mercury up to 400 atmospheres, and Lenz, who found .0002 for pure mercury between one and sixty atmospheres. In the experiments here described the mercury was carefully purified and distilled in a vacuum, and the pressures were obtained by means of the 'Screw compressor' of Barus, which is capable of indicating pressures up to something over 2,000 atmospheres. The Carey Foster method of measuring resistance was found most reliable. The results of the experiments are contained in two extended tables, and are further tabulated in a special chart. Taking β as the increment to unit resistance of one atmosphere increase in pressure, the equation obtained is as follows:

$$\beta = -.0000332 - 5 \times 10^{-9} t$$

where the last term, owing to its extreme smallness, is probably only approximately accurate. This result is very closely that of Barus, and the difference can be accounted for by the slight impurities in the commercial mercury used by him.

C. R. Eastman describes, with a series of figures, some remarkable Ctenacanthus spines from the Keokuk Limestone. Theo. Holm gives a fifth paper of his Studies in the Cyperaceæ, devoted to *Fuirena squarrosa* Michx. and *F. scirpoidea* Vahl. It is accompanied by two pages of illustrations. S. L. Penfield, of New Haven, and A. Frenzel, of Freiberg, Saxony, have a paper in which they show that the mineral chalcostibite (wolfsbergite) is identical with guejarite; they further give a detailed description of the form of the chalcostibite from Huanchaca, Bolivia.

H. W. Fairbanks has two papers, the first describing a striking case of contact metamorphism on Black Mountain, of the El Paso range, a spur of the Sierra Nevada Mountains, extending easterly into the Mojave desert. This is illustrated by a figure showing the diabase dike, with a slaty zone adjoining, of hard, firm rock, into which the soft tufa has been baked. The second paper describes the tin deposits at Temescal, southern California. The tin deposits here lie nearly in the center of a rudely semicircular area of granite about two miles in diameter and connected on the east with the great body of similar rock extending indefinitely in that direction. The sedimentary rocks along the edge of the granite area consist of quartzite, mica schist and conglomerate of unknown age. A part, at least, of the slates and limestones of the Santa Ana range are Carboniferous. The semicircular area of granite and portions of the adjoining porphyry have been fissured in a general northeast and southwest direction along almost innumerable lines, and a black vein matter deposited. The veins are generally small, varying from one-fourth to a few inches in thickness, but in the case of the main tin-bearing vein an enormous size is reached at Cajalco

Hill. As the hill is approached the veins become larger and finally culminate in this elevation, which is about 300 by 250 feet in diameter at the base. The veinstone of which it is mostly composed rises in prominent and bold croppings. With one or two unimportant exceptions, the material of which this, as well as the other veins, is formed consists wholly of tourmaline and quartz, with which the tin ores are locally associated. The larger veins, and the Cajalco in particular, are very irregular in size, sometimes appearing to be mere bunches in the granite. A few hundred feet northeast of the hill the vein has narrowed to six or eight feet, and it is here that the large body of tin was first discovered and the main shafts sunk. A slide prepared from one of the smaller veins, which in the hand specimen appeared to consist wholly of tourmaline, showed bunches of tourmaline crystals radially arranged and imbedded in interlocking quartz grains.

T. Wayland Vaughan has a paper on the outlying areas of the Comanche Series in Oklahoma and Kansas, in which he describes numerous localities in the region indicated, and supports Mr. Hill's conclusion in regard to the Cretaceous age of the deposits. He concludes that the supposed 'Jurassic' of Marcou "has been proven not only not Jurassic, but that it belongs to Cretaceous beds above his so-called *Neocomian*, which is far above the base of the American Cretaceous."

W. G. Mixter has an extended article on electrosynthesis, or chemical union, affected by means of electricity, but not, as distinguished here, that brought about by the heat of the electrical discharge. The special apparatus employed is described, and the eudiometric observations made with a mixture of hydrogen and oxygen, of carbonic oxide and oxygen, methane and oxygen, ethylene and oxygen, acetylene and oxygen. A comparison is made in several cases between the number of molecules oxidized and those of oxygen consumed, and it is concluded that the same electrical current causes the oxidation of a different number of molecules of the gases, the variation being as one to two, while the oxygen consumed varies as one to seven molecules. In conclusion the author regards the molecular change involved in electrosynthesis "to be analogous to those occurring in synthesis effected by heat or light where combination takes place at a temperature far below that at which the gaseous molecules dissociate." W. Lindgren describes monazite from the gold-bearing gravels near Idaho City, in Idaho, where its occurrence is analogous to that observed at other points, as in the eastern United States, Brazil, the Ural Mountains, etc. It doubtless forms an original constituent of the granite of the Idaho basin.

SOCIETIES AND ACADEMIES.

THE NEW YORK ACADEMY OF SCIENCES.

THE last meeting of the Academy until October took place in the lecture room of the Department of Physics, Columbia University, June 7th. Professor William Hallock described 'A New Method for Projecting Views of the Moon.' A hemisphere about 6 or 8 feet in diameter had been prepared and had been whitened. Using this for a screen, Dr. Hallock projected upon it views of the moon with a powerful arc-light lantern, adjusting the distances so that they just fitted the spherical surface. The natural features of the moon were reproduced with extraordinary vividness and lost all the flattening that is unavoidable with plane surfaces. The only drawback is the lack of sharp focus on the edges of lunar photographs. Adopting a suggestion of Professor Rood, Dr. Hallock had gone off at one side of his spherical screen, while a view of the moon was projected upon it, and had photographed it, thus securing a view of half the lunar surface, as if it had been taken at a point in space at right angles to the line connecting the moon and the earth. It gave a fairly true picture of one quarter of the moon from this point of view. Professor Rood had also suggested the value of projecting photographs of diversified topography of the earth on suitably inclined screens, with the object of reproducing their true relations in space, so as to aid topographic mapping. Such projections when viewed from above would give a bird's-eye view of a landscape in its true relations. Dr. Hallock will communicate a full account of these devices to an early issue of SCIENCE.

Miss F. R. M. Hitchcock next presented a